Orchestrate Your Preventative Maintenance

By Halsey King

The 12 Module Bus Inspection Technique can:

- Identify all systems and components to be inspected, from FMVSS 208 seat belts to AS1 windshield glass.
- Establish a system for all drivers and technicians to use. Now everyone inspects a bus the same way.
- Reduce driver complaints and write-ups. Indeed, prompt repair ensures better maintenance timing, and satisfied drivers.
- Reduce long-term fleet maintenance costs. This makes your fleet more affordable.
- Ensure a uniform quality of inspection. All drivers use Section 1 to 9, all technicians use Section 1 to 12. Now two sets of eyes are looking for defects.
- Be used on any bus. In fact, it works on most vehicles made for passenger transportation.

Managing a bus fleet is similar to conducting an orchestra. You need a trained staff with all the instruments and tools to make the harmony come out right. This short article contains a plan that will help you become a good conductor. In our business, we call that plan the written Preventative Maintenance or P.M. Program.

A key component of the P.M. Program is the inspection function, as carried out by the drivers and maintenance technicians. Strong inspections by trained staff are a vital support mechanism for P.M. functions, component life cycles, fleet safety and cost control.

In working with fleets around the world, I have noted that where defects are reported and repaired promptly, total fleet condition is enhanced and maintenance costs are reduced. Anything less than these basics strikes a sour note and can, in the long term, lead to catastrophic maintenance failures.

In many maintenance settings the drivers and maintenance technicians take different paths to performing the actual inspection of a bus. Drivers whose visual inspection follows the daily bus report (DBR) form, may go into and out of a bus several times as they check lights, seats, wipers, bells and whistles. The same is true with the maintenance techs and they use an entirely different form (such as an in-house A-B-C inspection card) as they proceed along their inspection path.

This is the norm in most bus fleets. But in the late 80's one of my many highway patrol client agencies observed that it might be better if the inspection process for bus drivers and maintenance technicians followed the same general path as truck fleets, known as the North American Truck Inspection Format. That's a format which takes the driver around the truck in a very logical and systematic way.

Deciding to create such a format for buses, we knew up front that any format used would be generic. It would not look exactly like the truck inspection process, and we would have to build in a lot of flexibility. After all, buses come with rear and front engine configurations. Seats, doors and the wheel chair lift could be placed almost anywhere between the front and rear bumpers.

Increasingly, our idea seemed to have merit among many agencies, private organizations and peer groups. We named it the "12 Module Bus Inspection Format." Training was then provided to motor carrier inspectors (highway patrol officers) and school bus maintenance technicians in a number of states over a two-year period.

Later, we took the program to another level. With the passing of additional ADA legislation in 1990, we made room to incorporate further federal and state requirements. Now a paratransit and small bus fleet could use the process from any state, and implement the new "12 Module Bus Inspection Technique" anywhere, just like the North American Truck Inspection Program.

But soon we uncovered a need

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can run its lights longer while the engine is not running.

Semiconductor construction allows LEDs to light up faster than incandescent bulbs. LEDs can help prevent rear-end collisions when used as brake lights because of the extra warning time they provide motorists behind your bus.

If you decide to make the change, be sure to purchase US DOT approved lights. This will ensure the lights meet appropriate brightness standards. Because LEDs are becoming more prevalent, your current parts supplier probably carries them. If it doesn't, a quick Internet search will provide you with a list of options.

Sources: Tracerline Products, *Tracerline.com;* Ultra-Violet Products, *www.uvp.com;* Echovision Systems, *www.echovision.com.* ▲

Bus inspection,

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to further train drivers and technicians in inspection compliance. For example, we learned that most maintenance techs did not know why a person cannot stand forward of the white line on the bus floor. Also, we discovered that while most drivers and technicians had heard of the Federal Motor Vehicle Safety Standards (FMVSS), not one knew where to access that information or which one of the 53 FMVSs applied to the small and large buses they were already inspecting.

This is a flexible process, a plan. It takes the inspector over, under, around and through a bus in a logical and systematic way. Because it is generic, each fleet manager needs to plug in their own state's vehicle regulations, such as California's Title 13 requirements, as well as their bus manufacturer's inspection criteria.

The 12 modules look something like this:

✔ For drivers and technicians:

Module 1. At the driver's area:
- Check driver's seat cushion, adjustment, bolts, and seat belt.
- Check instrument panel, gauges, lights, switches.
- Look for and document missing parts, loose components.

Module 2. In the vestibule area:
- Windshield cracks, defrost air, fan speeds, noise.
- Visors, doghouse deal, bolts.

Module 3. In the stepwell:
- Stepwell. Lights, grab rails, glass seals, over center bar, air operation, loose screws, and floor trim.

Module 4. Inside the bus:
- Interior lights, floor, seats, belts, open emergency exits, check seals, hardware, WCL tie downs, destination signs and ADA equipment.

Module 5. Front of the bus:
- Check mirrors, wiper speeds, washers, glass (and DOT markings), lights, clearance lights, 4-ways and turn lights. Also, leaks under bus.

Module 6. Driver's side of the bus:
- Check front tire tread, inflation, wheel lugs, side panels, mud flaps, all glass, side turn indicators, rear tires.

Module 7. At the rear of the bus:
- Inspect all lights and their operation, back up alarm, soot or exhaust deposits, exhaust pipe, and any loose or hanging wires.

Module 8. Right side of the bus:
- Check rear tires, inflation, wheel lugs, side panels, mud flaps, all glass and turn signals.

Module 9. Wheel chair lift:
- Follow manufacturer's inspection guidelines and operate as instructed.
- Look for loose electrical connections, oil leaks and any homemade parts attached to the lift.

✔ For technicians only:

Module 10. Under the bus (front):
- Check for leaks, smell of burning oil or rubber.
- Check tread and inflation; inspect gearbox, steering, brakes.

Module 11. Under the bus (center):
- Check for leaks, hanging wires and hoses.
- Check driver shaft and guards, inspect all body attachment bolts.

Module 12. Under the bus (rear):
- Inspect for any leaks.
- Check for the smell of raw fuel, burning oil, other parts.
- Inspect exhaust pipe for corrosion.
- Check rear tires.

Again, while not inclusive of all the checks this process could be tailored to fit, the modules start and end the same way with all buses.

Go ahead, try it out. The returns can be a "harmonization" of cost savings, safety enhancements and a uniform inspection technique to compliment your total preventative maintenance program.

For more detailed information, call CalAct at (800) 422-5228. Implementing this program will bring music to your ears.

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